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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,931	02/12/2002	Shunpei Yamazaki	740756-2433	3751
31780	7590	09/26/2006	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			ISAAC, STANETTA D	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



Continuation of Disposition of Claims: Claims withdrawn from consideration are 1-9,12,14,16,18,20,22,24,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72,74 and 76.

Continuation of Disposition of Claims: Claims rejected are 10,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59,61,63,65,67,69,71,73,75 and 77-85.

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### **DETAILED ACTION**

This Office Action is in response to the After-final filed on 8/09/06. Currently, claims 1-80 are pending. Claims 1-9, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74 and 76 have been withdrawn from consideration.

#### ***Response to Amendment***

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 10, 15, 41, 45, 47, 49, 55, 57, 59, 61, 67, 73 75 and 78 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 8 and 9 of prior U.S. Patent No. 7,7052,943 (Yamazaki et al.). This is a double patenting rejection.

Pertaining to independent claims 10, 47, 49, 67, and 78, Yamazaki teaches the invention as claimed. See claim 1, where Yamazaki teaches, a method of manufacturing a semiconductor device comprising the steps of: adding a metallic element to a first semiconductor film having an

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amorphous structure; crystallizing the first semiconductor film to form a first semiconductor film having a crystalline structure; forming a barrier layer on a surface of the first semiconductor film having a crystalline structure; forming a second semiconductor film on the barrier layer; adding a noble gas element (rare gas element) to a region of the second semiconductor film; gettering the metallic element into the region of the second semiconductor film to remove or reduce the amount of the metallic element within the first semiconductor film having a crystalline structure; and removing the second semiconductor film.

Pertaining to dependent claim 15, Yamazaki teaches, in claim 18, wherein the metallic element is one element of a plurality of elements chosen from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

Pertaining to dependent claims 41, 55, 57 and 73, Yamazaki teaches, in claim 9, wherein the noble gas element is one element of a plurality of elements chosen from the group consisting of He, Ne, Ar, Kr and Xe.

Pertaining to dependent claims 45, 59, 61 and 75, Yamazaki teaches, in claim 1, wherein the second semiconductor film comprises a noble gas element at a concentration of  $1 \times 10^{19}$  to  $1 \times 10^{22} / \text{cm}^3$ .

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The rejection of claims 10, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 47, 49, 51, 53, 55, 57, 63, 65, 67, 69, 71, 73 and 77-85 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Yamazaki et al., claims 20-24, 27-31, 33 and 35, of U.S. Patent No. 6, 808,968. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current application (10/072,931) anticipates the limitations of Yamazaki et al., US Patent 6,808,968.

Pertaining to independent claims 10, 47, 49, 67 and 78 of the current application (10/072,931), Yamazaki shows the invention substantially as claimed. See, claim 20, where Yamazaki shows, a method of manufacturing a semiconductor device comprising the steps of: adding a metal element to a first semiconductor film comprising amorphous silicon over a substrate; crystallizing the first semiconductor film to form a first crystalline semiconductor film; forming a barrier layer on the first crystalline semiconductor film; forming a second semiconductor film on the barrier layer; reducing a concentration of the metal element in the first crystalline semiconductor film by allowing the upper layer of the second semiconductor film to getter the metal element; and removing the second semiconductor film. In addition, pertaining to dependent claim 11 of current application (10/072,931, Yamazaki shows in claim 22, further comprising a step of adding one element or a plurality of elements chosen from the group consisting O, O<sub>2</sub>, P, H, and H<sub>2</sub>. Also, pertaining to dependent claim 13 of the current application (10/072,931), Yamazaki shows in claim 22, wherein the second semiconductor film has an amorphous structure or a crystalline structure. Pertaining to dependent claim 15 of the current

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application (10/072,931), Yamazaki shows in claim 23, wherein the metal element is at least one element selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au. In addition, pertaining to dependent claim 17 of the current application (10/072,931), Yamazaki shows in claim 24, wherein the crystallizing steps carried out by a heat treatment. Also, pertaining to dependent claims 19 and 21 of the current application (10/072,931), Yamazaki shows in claim 25, wherein the step of crystallizing the first semiconductor film is a process of irradiating strong light to the semiconductor film having an amorphous structure. Pertaining to dependent claims 23, 51 and 69 of the current application (10/072,931), Yamazaki shows in claim 27, wherein the barrier layer is formed by oxidizing the surface of the first crystalline semiconductor film with a solution containing ozone. Also, pertaining to dependent claims 25, 53 and 71 of the current application (10/072,931), Yamazaki shows in claim 28, wherein the barrier layer is formed by oxidizing the surface of the first crystalline semiconductor film by an ultraviolet irradiation. Pertaining to dependent claim 27 of the current application (10/072,931), Yamazaki shows in claim 29, wherein the reducing step is carried out by a heat treatment. In addition, pertaining to dependent claim 29 of the current application (10/072,931), Yamazaki shows in claim 30 wherein the reducing step is carried out by irradiating the first crystalline semiconductor film with a light. Also, pertaining to dependent claims 33, 35, 37 and 39 of the current application (10/072,931), Yamazaki shows in claim 33, wherein the light is emitted from one selected from the group consisting of a halogen lamp, metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high pressure sodium lamp, and a high pressure mercury lamp. Pertaining to claims 41, 55, 57, 73 and 79 of the current application (10/072,931), Yamazaki shows in claim 21, further comprising a step of adding at least one element selected from the group consisting of

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He, Ne, Ar, Kr, Xe, O, O<sub>2</sub>, H and H<sub>2</sub> to the second semiconductor film. In addition, pertaining to claims 63, 65 and 77 of current application (10/072,931), Yamazaki shows in claim 35 wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle-type display, a player using a recording medium, a digital camera, a projector, a mobile phone and portable book.

However, Yamazaki fails to show, pertaining to the independent claims 10, 47, 49, 67 and 78 of the current application (10/072,931), “adding a noble gas element to a region of the (second) semiconductor film.”

Yamazaki teaches, in the independent claim 20, “adding one conductive type impurity element to only an upper layer of the second semiconductor film”. In addition, Yamazaki teaches in the dependent claim 21, “further comprising a step of adding at least one element selected from the group consisting of He, Ne, Ar, Kr, Xe, O, O<sub>2</sub>, H, and H<sub>2</sub> to the second semiconductor film.”

It would have been obvious to one of ordinary skill in the art to incorporate, adding a noble gas element, in the current application (10/072,931), according to the teaching of Yamazaki, with the motivation that, Yamazaki includes adding at least one element selected from the group consisting of He, Ne, Ar, Kr, Xe, where theses element represent specific noble gas elements.

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 8/09/06, with respect to the verified English translation of priority document, JP200-040837, filed on 2/16/01 have been fully considered and are persuasive. The rejection under 35 U.S.C. under 103(a) of claims 10, 11, 13, 15, 17, 19, 21,

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25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 53, 55, 57, 59, 61, 63, 65, 67, 71, 73, 75 and 77-85, has been withdrawn.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanetta D. Isaac whose telephone number is 571-272-1671. The examiner can normally be reached on Monday-Friday 9:30am -6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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September 18, 2006

  
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SUPERVISORY PATENT EXAMINER